Guided Experiential Learning: Training Design and Evaluation

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Goals

When asked about experiential training design you will be able to:

1. Explain 5 misconceptions about training and the reasons for GEL Training design
2. Describe GEL design stages and their impact on learning and performance
3. Explain the principles supporting the design stages
4. Describe how to evaluate results on four levels

Training Misconceptions

1. Use of Multimedia and Games does NOT increase learning or motivation
   - Training methods influence learning
   - Motivation caused by beliefs
2. SME's give 50 – 80 % wrong or missing information on how to perform
   - Describe "what" not "how"
   - Leave out about 80 percent of "decisions"
   - Must use new task analysis methods – called "cognitive task analysis"

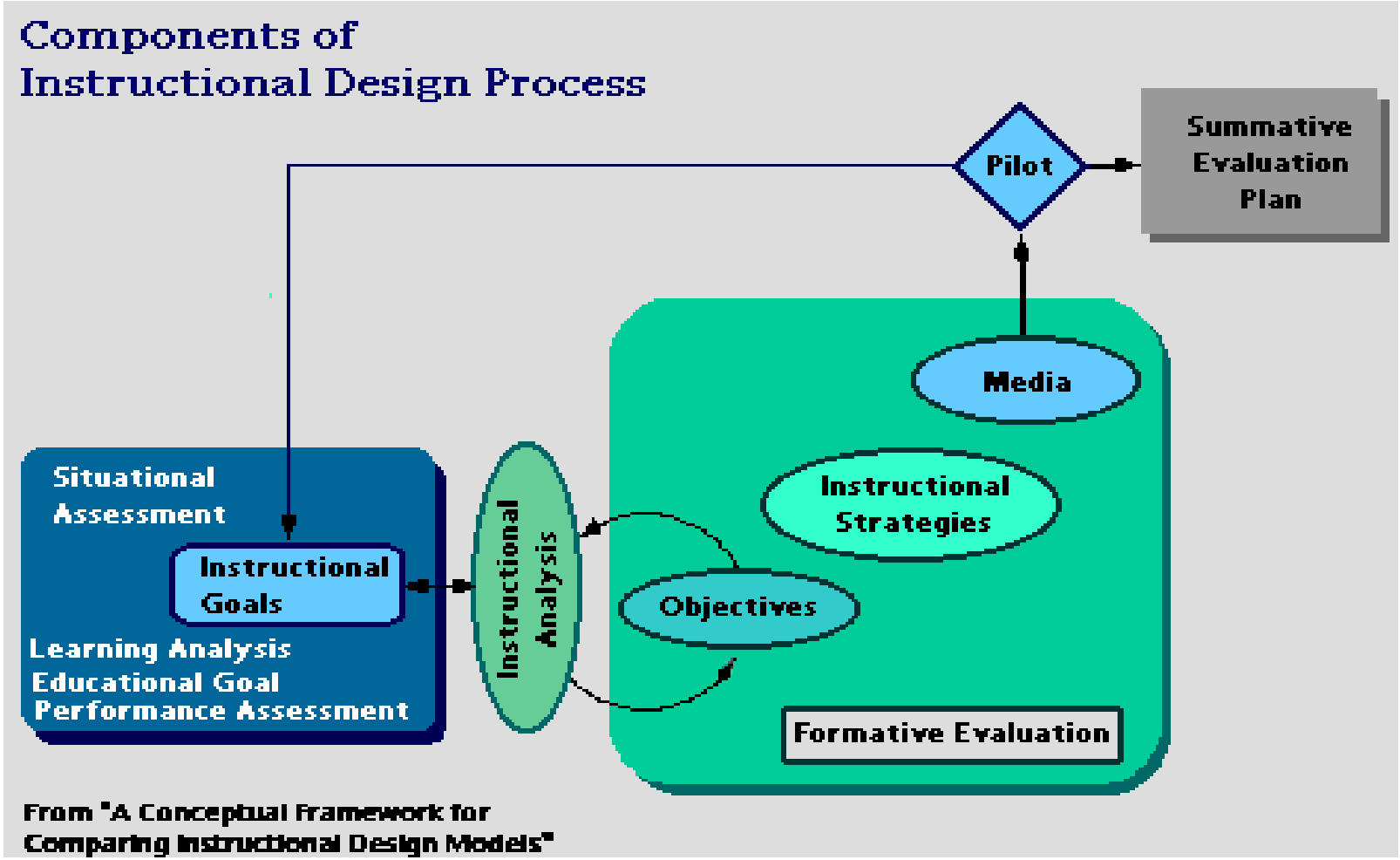
Training Misconceptions

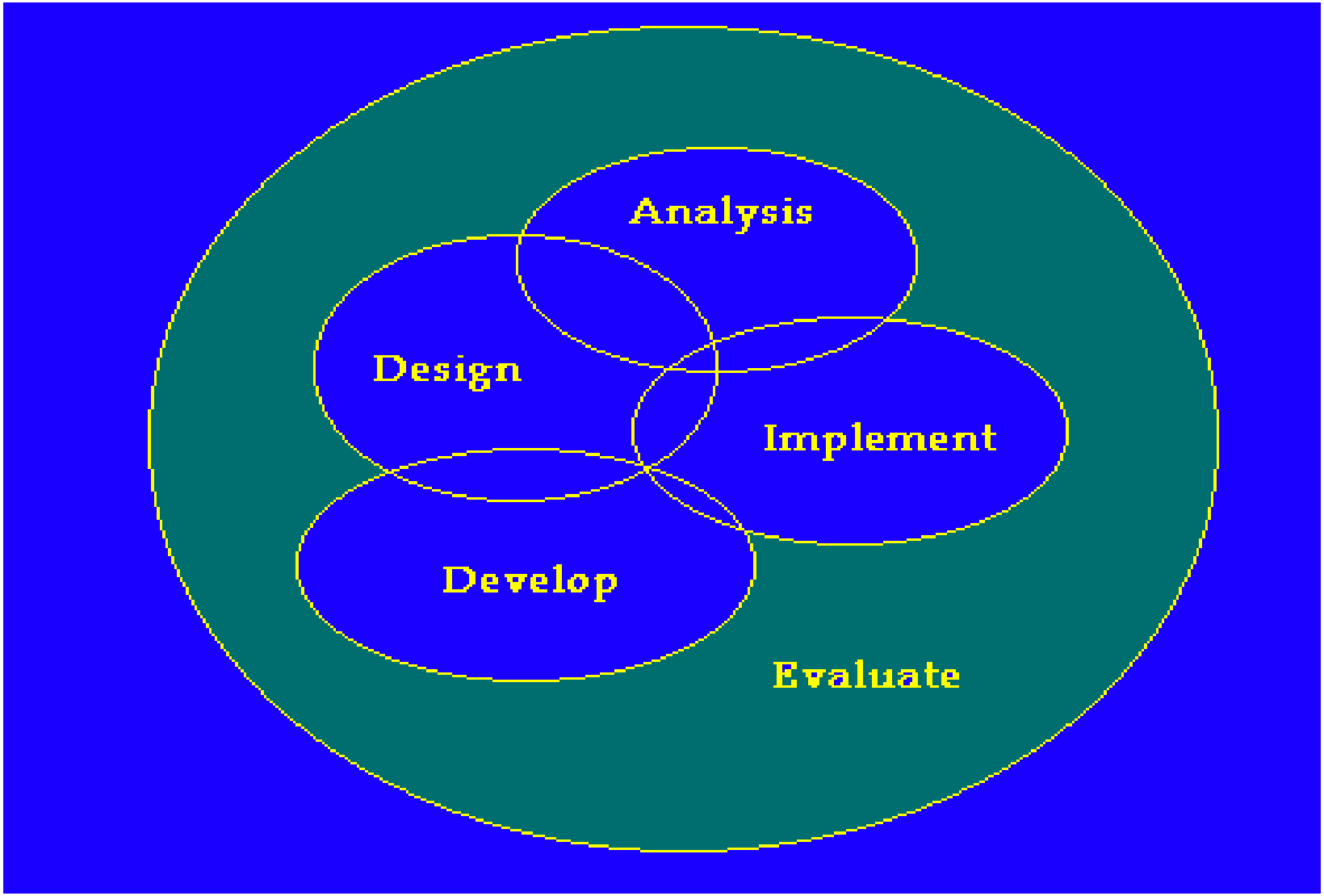
3. Unguided Training strategies called Discovery, problem-based, experiential, and constructivist learning do not work
   - Unguided training only works for advanced trainees
   - Must provide strong learning guidance
4. Learning styles like Meyer's Briggs and visual/verbal learners do not work
   - Only trainees with different levels of prior knowledge and motivation need different types of instruction

Training Misconceptions

5. ISD Training design and development systems tend to focus on teaching simpler knowledge
   - Taught in chunks that are not interconnected and applied adequately – focused on knowing not doing
   - Results are fragmented and resist transfer and successful application in the field
   - Need guided training that integrates knowing and doing through constant application and feedback

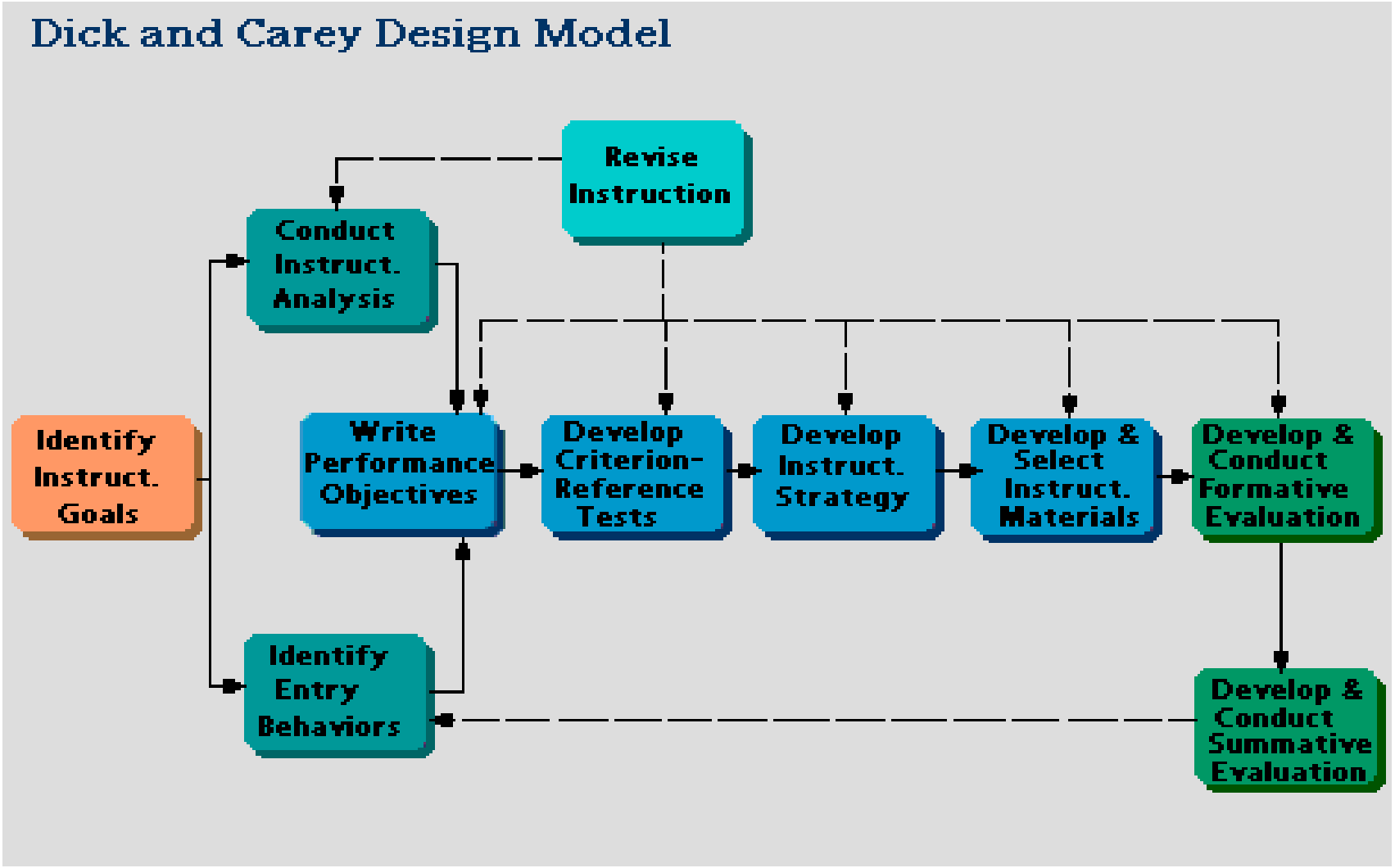
Many Design Models
Which is the best?



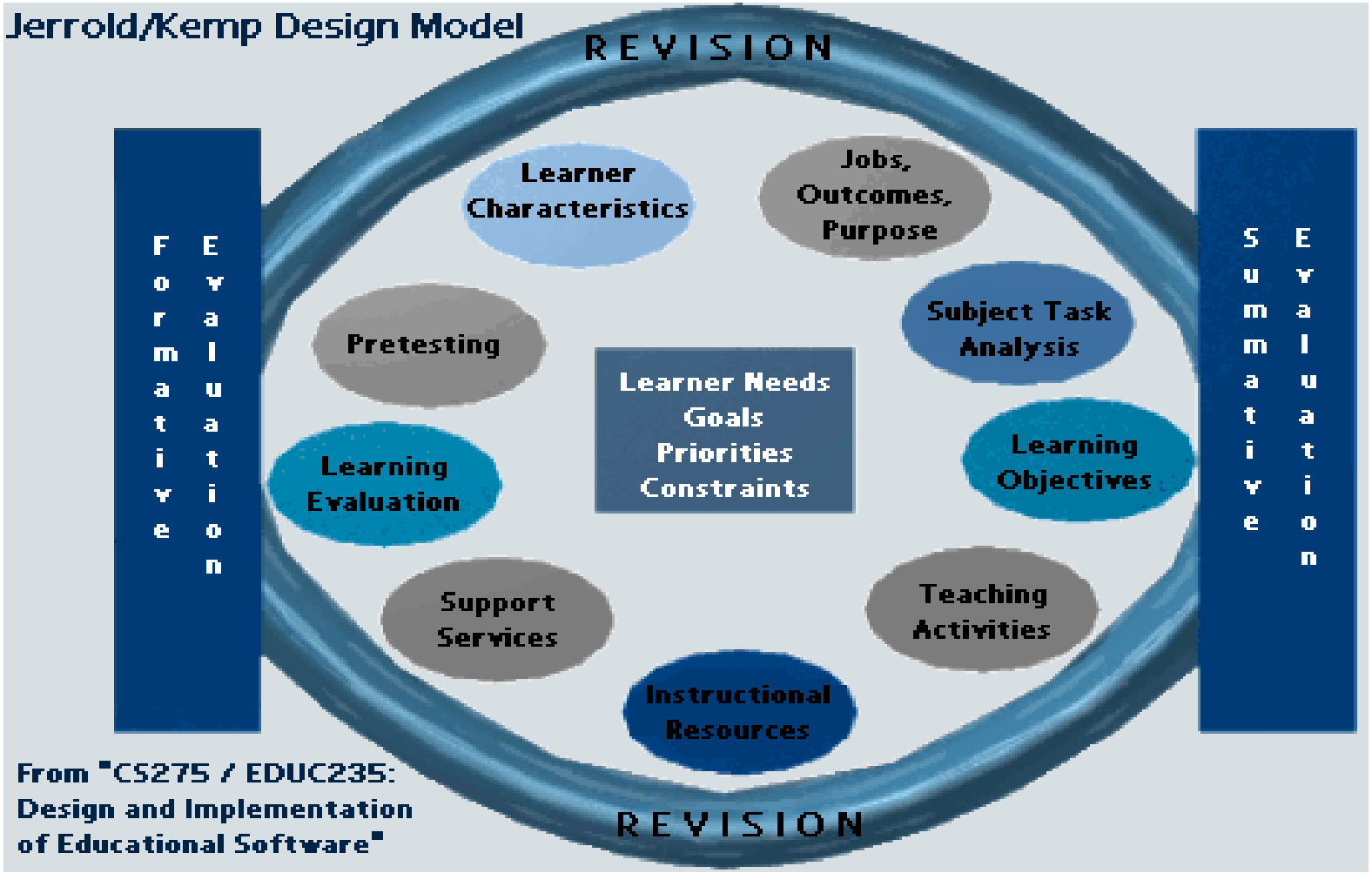


Traditional ISD Model

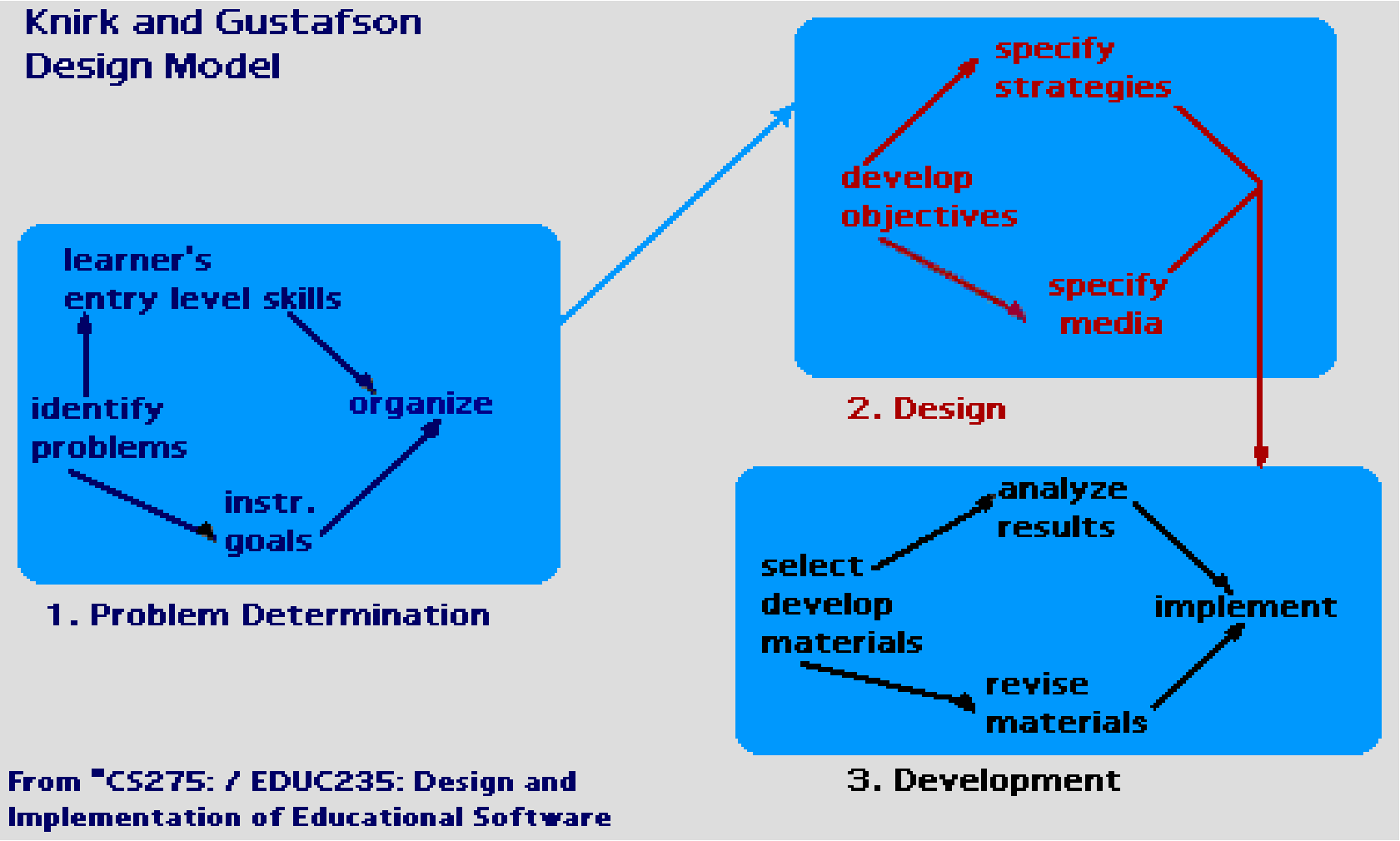
Dick and Carey Model



Jerrold and Kemp Model



Knirk and Gustafson Model



Problems With Existing Designs

- Learning and Transfer rates are very low
  - About 30 percent of what is needed is learned
  - Estimate 10 percent transfers to the field
  - Most learning is “on the job” and full of errors
  - Lack of command support for skill application
  - Learning gaps and difficulty translating “what to do” into “how to do it”
  - Real problems in field are usually more complex and require soldiers to adapt
- Success in training no guarantee of success in field

Problems With Existing Designs

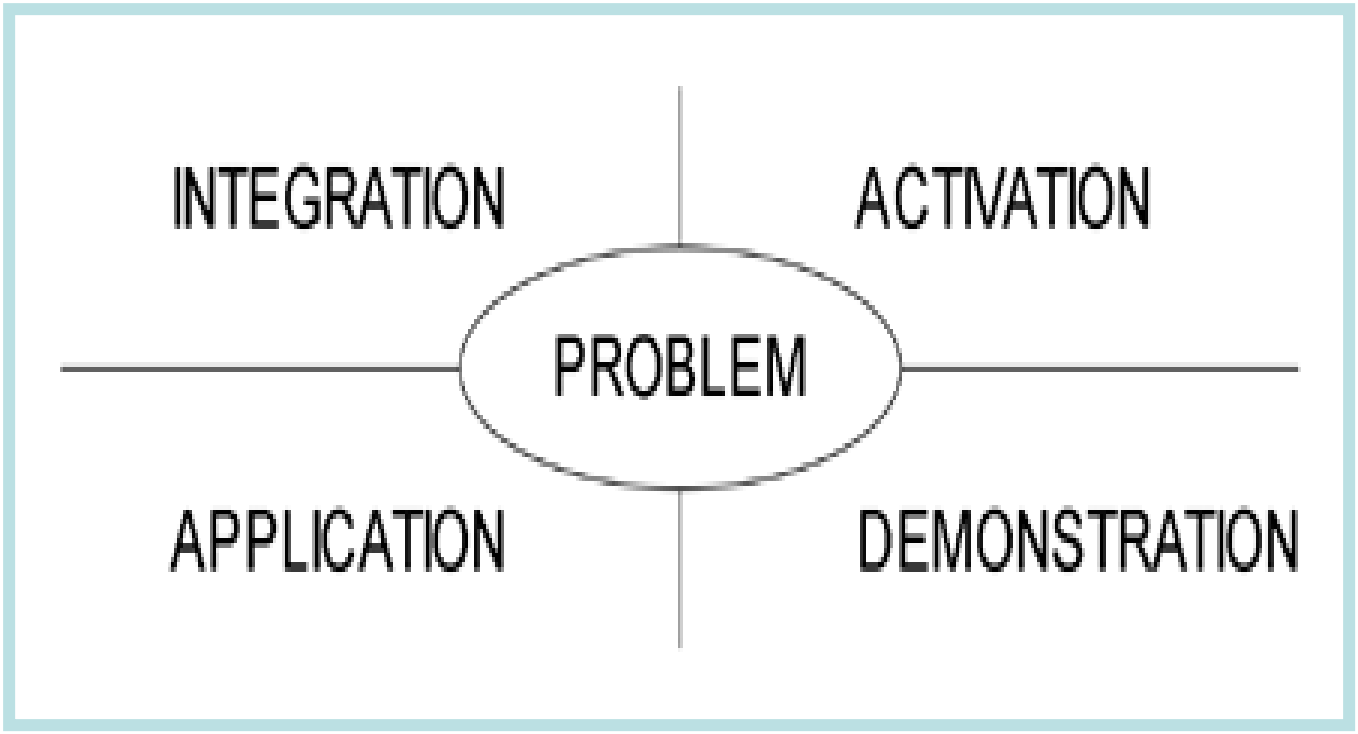
So what do we do?

- David Merrill at Utah State reviewed all existing effective design models to find their “active ingredients”
- Argued for constructing a hybrid based on the best components of the best models – GEL is our version of a hybrid

Merrill Captured Effective Components of All Design Models

Reviewed 30+ models and identified five components that were common to all effective models:

1. Solve real problems from field
2. Activate relevant prior knowledge
3. Demonstrate how to solve
4. Apply what is learned by solving
5. Integrate learning so that it reflects real field conditions



Five Most Important Design Elements of

Guided Experiential Learning

Guided Experiential Learning Compared to Unguided Immersion and Features Training

- Comparing GEL to Unguided learning

Three training groups (50 adults in each group) learning to use Excel Spreadsheet:

1. Unguided Experiential learning lesson
2. Standard “features” training from Excel
3. Guided Experience – Model we will discuss

Comparing GEL With Other Design Systems

Merrill's study of pure, guided and standard training to use excel spreadsheets

	Learning	Time	Satisfaction
Pure	34%	60 min+	High
Standard	68%	49 min	Low
Guided	89%	29 min	High

So what is Guided Experiential Learning?

- A Process for designing training to be delivered on any media platform
- A set of specific procedures for completing and testing each stage in the design and development process

Overview of GEL Design

Select Course & SME's

Identify Many Job and Mission Problems

Cognitive Task Analysis

Identify
- How to act and decide
- New concepts, processes
- Equipment and materials
- Performance standards

Design
- Four level evaluation
- Test of prior knowledge

Design
- Lessons
- Immersive demonstrations
- Checklists for practice
- Job aids for transfer
- Guided practice exercises
- Feedback for practice

Select delivery media

Using Guided Experience to Design Courses

Problem Selection and Examples

- Identify prior experience of trainees
- Identify five large, authentic field problems
  - Easy to very complex
- Create "worked examples" of the problems
  - Use cognitive task analysis
  - What are conditions, input and output
  - Solve for prior experience of trainees

Identify

- How to act and decide
- New concepts, processes
- Equipment and materials
- Performance standards

Conceptual Knowledge About Field Problems

- Collect information about
  - New concepts (definition and example)
  - Process (how it works – big picture)
  - Procedure (How to do it, conditions and consequences)

Design Lessons

- Sequence groups of problems into lessons
  - First performed in field or classroom
  - If no fixed sequence, easy to difficult
- Develop goals for each lesson
  - Remember definitions of concepts
  - Remember description of processes
  - Practice and perform procedure
  - Remember conditions and consequences

Design

- Lessons
- Immersive demonstrations
- Checklists for practice
- Job aids for transfer
- Guided practice exercises
- Feedback for practice

6 Instructional Methods for Each Lesson

Lesson Sequence:

1. Goals –
- You will learn how to (REMEMBER, DO…)

2. Reasons
- Value of learning - consequences of not learning
- What you already know that you should use

3. What You Need to Know to Perform
- Teach new concepts and processes needed to learn procedure

Design
- Lessons
- Immersive demonstrations
- Checklists for practice
- Job aids for transfer
- Guided practice exercises
- Feedback for practice

Lesson Sequence:

Design
- Lessons
- Immersive demonstrations
- Checklists for practice
- Job aids for transfer
- Guided practice exercises
- Feedback for practice

4. **Demonstrate** procedure
   - Worked example – authentic setting
   - Instructor or Model should be credible, similar
5. **Practice** with incomplete problems
   - Trainees use partly worked example or demo
   - Practice more complex/difficult problems that integrate previous learning
   - Gradually fade support – training wheels come off!
6. **Feedback** focused on strategy improvement

Select delivery media

Design
- Four level evaluation
- Test of prior knowledge
- Transfer letters

Media Selection, Evaluation and Transfer

- Select media based on context, practice and cost
- Evaluate on four levels
  1. **Reactions** (motivation - confidence, value)
  2. **Learning** (use practice exercises to evaluate)
  3. **Transfer** (check with supervisor/commander)
  4. **Impact** (did it make a difference to bottom line?)
- Send letter to commander asking for transfer help

Example from ICT

Full Spectrum Warrior – X Box Platform

- Squad leader planning and decisions
- Imagine that lessons have provided goals, reasons, what they need to know (concepts, processes) and procedures
- FSW is not “stand alone” training (except for experts) - can be used for demonstration, practice and feedback once lesson reaches demo and practice

INSERT FSW MOVIE HERE

A New ICT Example

Slim ES3 (Every Soldier a Sensor) –

PC Platform

Active Surveillance and Threat Identification

- Imagine that lessons have provided goals, reasons, what they need to know (concepts, processes) and procedures
- ES3 is not “stand alone” training (except for experts) - can be used for demonstration, practice and feedback once lesson reaches demo and practice

INSERT ES3 MOVIE HERE

Adopting Guided Experience to Distance Courses

Two Cautions:

1. Eventually, training must duplicate field conditions and consequences of actions
   - "If this happens and you perform the procedure the result will look like this"
2. Real time observation of practice with immediate feedback
   - Teams must practice together

Summary

Despite more up front time and effort required for Guided Experiential Design and delivery:

- Amount learned increases
- Learning time decreases
- Learners like it as well as pure immersion
- Involves “authentic” settings and tasks
- Transfers to the field and reduces application errors

What is not to like?

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